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LATENT FUNCTIONS OF THE TELEPHONE:

What Missing the Extension Means

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ABSTRACT

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A survey of New Yorkers deprived of residential telephone service for 23 days validates previous discursive research on the social role and psychological functions of the medium. Respondents who said they enjoyed and needed the telephone were found to feel isolated, uneasy, and less in control without it. While 33% used more media during the deprivation period, few wrote more letters. Interpretation of the findings concludes that though many regard the telephone with ambivalence for its intrusive capacity, most value it strongly for the sense of "symbolic proximity" it provides with scattered family and friends.

Latent Functions of the Telephone:

What Missing the Extension Means

On February 27, 1975 a fire in one of the major switching centers of the New York Telephone Company left a 300 block area of Manhattan without phone service for 23 days. The 15 hour blaze silenced 12 exchanges, disconnected 144,755 phones, and disrupted the normative communication behavior of 90,399 Ma Bell customers.

Although the local press and national news media covered the event until full service was restored, their projection of "what missing the telephone means" was typically anecdotal and preconceived.[1] As thousands of New Yorkers became suddenly aware of how life without the telephone was to be lived, no coherent image emerged as to the real impact of a sustained deprivation of our most pervasive means of electronic communication.

Such partial scrutiny has long characterized the study of the telephone in academic as well as journalistic circles. With the rapid development of radio in the 1930's, systematic inquiry into the functions and effects of the telephonic medium was understandably displaced by a mounting preoccupation with the more dynamic channels of mass communication. Even in recent years, however, as the steady growth rate of the "personal message system" has outstripped the faltering expansion of the public media (Maisel 1973), no concurrent increase in investigative activity has occurred. Aronson (1971) in fact, cites "ninety odd years of scholarly neglect, not to say disdain," in beginning his comprehensive treatment of the "social consequences of the telephone"-- the only discussion of its kind since 1906.[2] If, as he suggests, we continually fail to

examine those aspects of social life we take most for granted, then in that universe of "invisible environments" where communication researchers are purported to live, the ring of the telephone has remained especially imperceptible.

The present study, in the spirit of Berelson's (1954) bench mark survey of reactions to missing the newspaper, attempts to take advantage of the Manhattan phone blackout to examine a number of standing speculations on the significance of the telephone as a tool of mediated socialization.

According to Aronson, the home phone functions in an urban setting to reduce loneliness and anxiety, increase feelings of security, and maintain cohesion within family and friendship groups. The central assumptions behind such a role concerns what Ball (1968) has called the "centrifugal effects" of the medium. As family and friends are scattered geographically by contemporary demands for mobility and change, ready access by telephone is made to compensate for the loss of shared environs even while facilitating the dispersion.[3] Feelings of isolation and uneasiness are allayed by the potential to call or be called at any moment. Under these conditions, the impact of the telephone on the use of other media and the frequency of face-to-face communications is, for Aronson, an open question. What both he and Ball take as axiomatic, however, is the telephone's decentralization of our urban lifespace into a matrix of "intimate social networks" dubbed "psychological neighborhoods." They assume that a normative environment, albeit an impalpable one, exists for every individual with a residential telephone--to which we add but for only as long, perhaps, as the medium is able to sustain the potential for immediate interaction. In other words, given a situation such as the Manhattan blackout, will feelings of isolation and uneasiness

surface in people abruptly deprived of phone service? Or will they value, instead, an unexpected freedom from intrusion? Will they turn to other channels of communication and increase their face-to-face encounters? Will phone deprivees, in short, miss the telephone, and both admit to and demonstrate a need for the latent functions which are prescribed to it? In formulating our questionnaire we hypothesized the following:

1. The social role of the telephone: If the telephone does play a particular role in the gamut of our daily communication behaviors, then the de facto existence of that role should be demonstrated by the extent to which people deprived of their residential phones attempt to restore their personal networks by using alternate telephonic means (emergency street phones or business and pay phones outside the blackout area) rather than other communicative modes such as letters or telegrams. If, further, the particular role of the telephone resides in maintaining one's psychological neighborhood, then deprivees should report not only missing the phone, but missing it most for calls made to and received from their family and friends.

2. Psychological functions of the telephone: If, as Aronson suggests, the telephone is used to reduce loneliness and anxiety, and increase feelings of security, we would expect the loss of phone service to generate feelings of isolation and uneasiness in the deprivees and to decrease their feeling of control over daily life. Few people, correspondingly, should value their temporary freedom from telephone intrusions.

3. Compensatory behaviors during the blackout period: If personal use of the telephone displaces face-to-face communication, then people deprived

of phone service should both visit and be visited more frequently during the blackout period. Similarly, when deprived of their prime mode of mediated socialization, people should tend to compensate for the loss of interpersonal contact by increasing their consumption of other media, particularly those channels which most readily provide a parasocial substitute for personal interaction.[4]

Method

Immediately following New York Telephone's announced restoration of phone service, a trained team of interviewers placed calls to 600 randomly generated telephone numbers.[5] Random generation of the four-digit suffix was used for two reasons: (1) the utility declined to release a list of all affected numbers, and (2) an estimated 25% of all New York telephones are not listed in the city's directories. Recent research (Fletcher and Thompson 1974) has suggested that random generation of phone numbers controls for unlisted numbers and yields approximately the same sampling distribution as alternate methodoligies such as stratified sampling.

New York Telephone did indicate that all twelve exchanges affected by the fire contained approximately the same number of listings. 50 numbers were randomly generated for each of the exchanges. In the course of placing the calls, 89 of the 600 numbers were discarded for being non-residential. Additionally, 192 of the generated listings were found to be either disconnected or not in service; 97 respondents refused to cooperate; 32 numbers yielded no answer

after at least five separate recalls. The completion rate based upon an eligible total of 319 was 190, or 60%.

Respondents who agreed to cooperate were asked a series of questions designed to probe the study's formulated suppositions. In order to establish baseline levels of telephone use, subjects were asked to estimate the number of calls they made and received on their home phones during an average day. They were also asked to approximate the total amount of time they spent daily on their home phone.

Attitudes toward the medium were sampled in two questions. The first asked subjects how they felt in general about using the telephone. Responses were measured on a four-point scale from "Enjoy using the telephone and use it at every opportunity," to "Avoid using the telephone as much as possible." The second question asked respondents to rate, as a result of their deprivation experience, how necessary they believed the telephone to be to them in their daily lives. Replies were chosen from a five-point scale spanning "Absolutely necessary" to "Not necessary at all."

To focus upon the social role of the telephone, subjects were asked if they had missed not having the phone and, if so, what kinds of calls they had most missed being able to make and/or receive. A third question asked about what other communicative means the respondents had used to maintain contact with others during the blackout.

Psychological functions of the telephone were tapped by asking subjects if they agreed or disagreed with each of a series of six statements describing various reactions to being without the phone. The statements were:

1. "I felt uneasy without the telephone."
2. "I enjoyed the feeling of knowing that no one could intrude on me by telephone."
3. "Life felt less hectic without the telephone."
4. "Life felt more frustrating without the telephone."
5. "Having the phone back now, I feel more in control of things."
6. "I felt isolated without the telephone."

To discover if the loss of phone service had resulted in a compensatory increase in both real and parasocial communication of an interpersonal nature, subjects were asked if during the blackout period they had: (1) done more visiting and/or had been visited more often than usual, and (2) if they had used more mass media than normal. If they replied that they had consumed more media, they were asked to mention those to which they had turned.

Finally, subjects were asked basic demographic information on age, sex, and occupation.

Results

Telephone use: Table 1 indicates the results of the first series of questions concerning normal telephone use. Slightly less than half the sample reported making and receiving from 3 to 5 calls per day. There was a significant relationship between the number of calls made and received; individuals who said they made a large number of calls also reported receiving a large number (x^2=161.99, df=16, $p < .001$).

------Table 1 about here------

Almost two-thirds of those questioned said they spent less than a total of 30 minutes per day on the home phone. There were no significant relationships between telephone use and the age, sex, or occupation of respondents.

Attitudes toward the telephone medium: In spite of low figures for reported usage, the telephone was nevertheless perceived as a necessity of daily living. 90% of those questioned felt that the telephone was, in some measure, "necessary;" 48% characterized it as either "very necessary" or "absolutely necessary." As Table 2 indicates, the sample was also very positive in its attitudes toward using the medium. 33% replied that they "enjoyed using the telephone and used it at every opportunity," over half reported that they used it "whenever necessary." Only 15% of the sample indicated negative attitudes towards telephone use.

------Table 2 about here------

There was a significant relationship between perceived necessity and attitudes toward phone use. Not surprisingly, those individuals who reported more positive feelings about using the medium also declared the phone to be far more necessary than those who expressed less positive attitudes toward telephone communication ($\chi^2=56.98$, df=12, $p<.001$). Perceived necessity was also highly associated with the age of the respondent; as age increased, the need for the phone also increased ($\chi^2=31.07$, df=12, $p<.005$).

Social role of the telephone: As expected, relatively few people turned to other modes of communication during the phone blackout. When asked how

they had managed to communicate with others during the deprivation period, 48% reported using the emergency street phones provided by the phone company and 33% (virtually everyone in the sample with a daily occupation) said they had made calls from work. Only 10% reported writing more letters during the deprivation period and less than 2% stated they had communicated via telegram. These data thus support the notion of a particular role for the home phone in the gamut of our communication behaviors.

The nature of this role appears to lie, as Aronson contends, in the maintenance of one's"psychological neighborhood." Four out of five respondents admitted to missing the phone, and the calls they missed most were those to and from their primary social relations. Table 3 presents the relevant data. 47% of people who missed the phone said they most missed being able to call friends; 57% of them reported missing the ability to receive such calls.

------Table 3 about here------

Family related calls were the next type most frequently missed. 40% of those who missed the phone said they most missed calls to family members; 47% of them reported missing the ability to receive such calls.

Psychological functions of the telephone: As Aronson suspected and the results in Table 4 confirm, a working telephone reduces loneliness and anxiety, and increases feelings of security. Over two-thirds of the sample agreed

------Table 4 about here------

that living without the phone made them feel either "isolated" or "uneasy," 53% reported both reactions. Life was also more "frustrating" for over half the respondents. Most dramatically, 72% of all subjects agreed that they felt "more in control of things once their phone service was restored. 45% of the sample felt isolated, uneasy, and less in control during the blackout period.

Surprisingly, however, the supposition that few people would value their temporary freedom from intrusions proved false. 47% of the sample agreed that "life felt less hectic" without the telephone, and 42% concurred with the statement that they "enjoyed the feeling of knowing that no one could intrude on me by phone." Those who preferred the lack of intrusion were also less likely to feel frustrated by the deprivation (X^2 corrected= 4.49, df=1, $p < .05$). An interesting conflict in reactions, however, is posed by the extent to which those who enjoyed the hiatus were nevertheless likely to report negative feelings towards it. For instance, 59% of those who enjoyed the blackout for its lack of intrusions still agreed that they had felt uneasy without the telepone (X^2 corrected= 4.60, df=1, $p < .05$).

In general, responses to the six questions on psychological functions were unrelated to age, sex, or occupation. There were a number of noteworthy relationships, however, between some of the statements and other variables pertaining to use of the telephone and attitudes toward the medium. For example, those respondents who agreed that they felt isolated during the deprivation period also tended to be the subjects who used the phone more. 52% of those who estimated they spent less than 15 minutes a day on the phone felt isolated, compared to 81% of those who spent over an hour. Similarly, the more necessary a person considered the phone to be, the more likely he was

to feel cut off during the blackout. Though 47% of those who said the phone "not very necessary" experienced isolation, 86% of those who perceived the medium as "absolutely necessary" reported the reaction (X^2= 15.00, df=4, p<.005).

The perceived necessity of the phone was also found to be associated with feelings of lost control over daily events. The more necessary a person declared the phone to be, the more likely he was to agree that he felt in control again once service had been restored (X^2=37.72, df=4, p<.001). In addition, respondents who had access to phones at work tended to feel less out of control during the blackout period than those who could not call from a place of business (X^2 corrected=5.68, df=1, p<.025).[6] Finally, with regard to perceived necessity individuals who enjoyed not being intruded upon also tended to rate the phone as being far less necessary than those who did not value the respite from intrusion (X^2=11.02, df=4, p<.05). In summary, attitudes toward phone use and the responses indicating the telephone's covert functions were useful predictors of a respondent's degree of dependance upon the medium.

Compensatory behaviors during the blackout period: Aronson's suspicion that personal use of the telephone displaces face-to-face communication was supported, though not to a striking degree, by the fact that 34% of the sample responded positively when asked "Did you find yourself visiting more people than usual during the blackout?" An accompanying question, "Did people visit you more than usual during the same period?" elicited an identical percentage of affirmative replies. 67% of those who increased their amount of visiting also reported being visited more themselves (X^2 corrected=44.45, df=1, p<.001).

The prediction that the sample, if deprived of its prime mode of mediated

socialization, would tend to compensate for the loss of interpersonal contact by increasing its consumption of other media was also weakly supported. When asked "Did you find yourself using more media than usual during the blackout?" 31% of the subjects said that they had. Fully half the sample neither visited more often nor used mass media more often during the blackout.

The hypothesis that those channels of mass communication which most readily provide a parasocial substitute for personal interaction would be the ones most often turned to was supported to the extent that television and radio were named most frequently by those who said they had used more media. People cited television three times as often, and radio twice as often, as they did newspapers, the third most frequently named medium.

Summary and Discussion

To the majority of people on Manhattan's Lower East Side, the telephone proved to be a communicative mode for which no satisfactory alternative was available. Confirmed as an essential fixture of the urban life-style, the residential phone was used without hesitation when available and missed pervasively when withdrawn. From most in the sample, neither the exchange of letters nor the one-way flow of mass communications could be made to substitute for the immediate interaction provided by the telephone. Residents verified this distinctive role for the medium by either turning to out-of-home opportunities for calling or tolerating the temporary dissolution of their personal networks. Consequently, they experienced a loss of the telephone's

recessive functions and felt variously isolated, uneasy and, especially, less in control. Perhaps the significance of these latent dependencies is best indicated by the fact that almost half of those who rated the phone as less than necessary still reported feeling isolated without it.

The modest boost in television and radio consumption among deprivees must be interpreted as no more than suggestive of the possibility that those channels were used as surrogates for social contact. In the absence of data detailing specific program choices, it would be dubious to infer that the increased usage were solely related to the simulated intimacies which the electronic media are said to provide. The need to simply hear the latest news on the blackout could just as easily account for the rise in consumption. Yet the fact that one in three people, having lost a genuinely interactive means of contact, should resort to the passive reception of other forms of mediated communication remains a finding not entirely dismissable by scrupulous qualification. The image of men and women turning from a disconnected source of personal exchange to the unresponding faces, voices, and printed words of our mass informers and entertainers projects the existence of a certain mutability among our communicative needs that is, at the least, an obvious area for future investigation.

The equally modest jump in visiting by the sample offers less ambiguity of interpretation. In light of the probability that many friends and family members live too far away to engage in the inconsequential chatting that constitutes most social calls, the fact that a third of the respondents was either visited more often or took the additional time themselves to re-enter "real space" so to speak, suggests the possibility

that those visits which were made involved social relations in the immediate residential area. An answer to Aronson's query on the effect of the telephone upon the frequency of face-to-face communication is thus projected: the medium, it would appear, does tend to reduce the amount of unmediated socialization among friends and family still living in the vicinity of the caller. A person's "psychological neighborhood," in this case, would not be just a mental landscape which began at the borders of his actual neighborhood, but one which superimposed itself upon his immediate environs, drawing him into a home-based telephonic web and out of the kind of street life that reduces isolation and makes a neighborhood a more supportive community. The telephone, in other words, both gives and takes away; though it may reduce loneliness and uneasiness, its likely contribution to the malaise of urban depersonalization should not be underestimated. Such ironies are now an old story: a technological device eventually comes to function in solving a problem which it in part has generated.[7]

This wider issue aside, the fact that people missed receiving calls more than making them clearly focuses upon what is central to the nature of the telephone as an instrument of urban adaptation. Though the difference in figures no doubt reflects the availability of the emergency street phones for outgoing calls, it also underscores the social role of the phone not only as a means of immediate interaction but of what might be called imminent connectedness as well. This is to say that for people who miss the phone, their lost accessibility is as important to them, if not more important, as their suspended option to reach others without delay. The telephone, in short, can be seen as a two-way street through the psychological

neighborhood. Additional research, we suspect, will show the frustration reaction related most strongly to the inability to make calls, responses of isolation and uneasiness to the suspended potential for receiving them, and the feeling or lost control to both aspects of the medium's bi-directional utility.

The widely distributed control reaction, in fact, when taken in context with the kinds of calls missed most and the finding that other people judge the phone more necessary as they grow older, suggests that the telephone's capacity to reduce loneliness and anxiety is better interpreted as the measurable effect of a more fundamental function. One out of five Americans changes his address each year, and the dispersion is compounded by time (Toffler 1971). The older a person becomes, the more frequently each of his friends and family members will have moved and moved again. Under these conditions the traditional extended family becomes the over-extended family, strung out on telephone wires and occasional letters. The boundaries of one's social reality are no longer rooted in contiguous space but in a kind of symbolic proximity which short circuits distances into dial time and replaces the supportive nature of daily interactions with the telephone's potential for instant contact. Though only an internalized "~~perceptual~~ conceptual environment," as the ecologist Dubos (1972) would say, such an essentially subjective construct nevertheless conditions one's sense of socialization as surely as the tangible influences of the front stoop, the back fence, and the girl next door. To abruptly suspend these imperceptible habituations must be to some extent as threatening to the reliability of one's interpersonal linkages as waking one morning to find

vacant lots where neighbors' houses had stood the night before.

In sum, the ubiquitous feelings of lost control produced by the deprivation period point to an assault upon the basic way in which sample members conceived of and structured their social reality. Though Aronson and Ball imply the potential for such an influence in the concept of the psychological neighborhood, they do not grant it the hierarchical importance the present data suggests. Instead, appropriate to the stage of their investigations, they stress those latent functions which now appear dependent on the telephone's ability to support both immediate interaction and imminent connectedness, capacities which we propose to be complementary aspects of a more primary psycho-social function for the medium, the maintenance of symbolic proximity.

The large minority of the sample who enjoyed the blackout's lack of intrusions serves to quality, though not deny, this fundamental function of the telephone. Taken together with the response of those who found life less hectic without the phone, the intrusion reaction reveals an ambivalence toward the medium which may be traced to its trade-off of distance for time and privacy for accessibility. Though the telephone fosters mobility by promoting instant contact, it also annexes an individual's personal space into the extensional realm of all those who have his phone number; though it dispels isolation by providing a sense of open channels, it also puts a person at the mercy of others' communicative needs.[8] The telephone may well bolster the urban dweller's feelings of control, but in reality it exacts a price in interruptions and the unchosen investment of time. Such compromises were apparently less tenable to those in the sample who enjoyed the blackout's

freedom from intrustions. Whether a similar ambivalence remained nascent in a larger proportion of those questioned, or whether such feelings indicate a distinctly different psychological orientation towards the value of mediated socialization versus personal solitude could not be derived from the available data. Along with the following areas, the question offers a focus for further investigation.

The use of a more representative sample is in order to permit further generalizations of the data and conclusions. Our population, of course, was pre-selected by a freakish and chance event; the twelve affected exchanges were all concentrated in one sector of a very diversified city. Furthermore, the concept of the "psychological neighborhood" fits hand in glove with an area like Manhattan's Lower East Side. Its successive waves of migration and shifting socio-economic stratification all but guarantee the degree of dispersion and mobility required to create that conjunction of attitudes and feelings we have labeled the need for symbolic proximity. Therefore, a sampling of both socially scattered and stabilized populations in urban, suburban, and rural settings is indicated to determine if the latent functions of the telephone are altered significantly by such situational variables. Naturally, it would be impractical to recreate circumstances in which each of the requisite sub-samples were deprived of home phones for an extended period. However, by using some of the preliminary findings to guide formulation of a more sophisticated questionnaire, it should be possible to tap those thoughts and valuations surrounding the telephone which remain initially recessive in its undeprived users.

Such a broad-based survey might also attempt to settle the questions raised here concerning other communicative behaviors presumed to be compensatory to the telephonic mode of interaction. Specifically, further attention might be directed toward determining (1) the kinds of media content likely to be selected by people deprived of their telephone, and (2) the types of gratification associated with the consumption of such selections. The results could then be used to support or disprove the notion that people deprived of one technological extension of the socialization process will tend to transfer their communicative needs to a surrogate medium, even when the substitute channels offer only vicarious approximations of the original interaction.

Within the small body of research on the telephone, there are additional suggestions for investigation which grow out of a wider context than those permitted by the parameters of the present study. Questions of a political, economic, and technological nature accompany other issues in the sociology of communications. The invisibility of the telephone may have passed its peak transparency with the wire-tapping revelations of recent years, but for most social scientists, the telephone is still a medium which is answered more often than it is questioned.

Footnotes

[1] Time (1975, p.73) and Newsweek (1975, pp. 61-2) stressed the blackout's impact upon businesses and service organizations, with the latter publication devoting most of its column space to New York Telephone's expensive repair activities. A feature article in the New York Times (Hagan 1975, p. 9) quoted deprivees on the phone's necessity and its ability to create feelings of security. Both the Time and the New York Times stories carried statements by university professors lauding their regained privacy.

[2] An article by Ball (1968) is also of note. Though it does not have the breadth of the Aronson study, its discussion of the telephone's impact upon interpersonal communication is salient and thorough.

[3] McLuhan (1964, pp. 271-2) should also be read for his implications along this line of thought.

[4] Glick and Levy (1962, pp. 141-70) describe a "para-social relationship" as a vicarious and unreciprocated state of pseudo-communication which television viewers typically generate and maintain between themselves and the "personalities" of the video medium.

[5] Berelson (1954) used lengthy field interviews to measure the impact of the 1945 newspaper strike in New York. While the field technique provides an opportunity for extensive questioning, it was felt that for the present study early contact via the deprived medium itself would be especially valuable in maximizing respondent sensitivity and recall.

[6]This working segment of the sample also tended to rate the phone as far less necessary (X^2=10.62, df=4, $p<.05$) suggesting perhaps, that its members alternate means of access had screened them from the sensitizing deprivation which would have made them more aware of both the telephone's necessity and its importance as an agent for reducing frustration and increasing one's sense of control.

[7]Of many recent writings along this thematic line, see especially Slater (1974, pp. 1-34) and Illich (1973, pp. 10-48) for their precise and unrelenting analysis of the double-bind inherent in most of our technological tools and the institutionalized systems behind them.

[8]The anthropologist Edmund Carpenter (1973) relates an incident of some years ago in which a mad sniper killed thirteen people, then barracaded himself in a house while he shot it out with the police. An enterprising reporter discovered the phone number of the beseiged house and called. The killer put down his rifle and answered the phone. "What is it?" he asked. "I'm very busy now."

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Table 1

Telephone Use

Amount of Use (#calls/time on phone)	Calls Made		Calls Received		Time on Phone	
	N	%	N	%	N	%
Low (0-1/less 15 min.)	20	10.5	22	11.6	69	36.3
Medium/Low (2-3/15min-½ hr)	38	20.0	32	16.8	43	22.6
Average (4-6/½ hr-45 min)	92	48.4	90	47.4	16	8.4
Medium/High (7-9/45 min-1 hr)	17	8.9	15	7.9	30	15.8
High (10+/more 1 hr)	23	12.1	31	16.3	32	16.8
Total	190	99.9	190	100.0	190	99.9

Table 2

Attitudes Toward Using the Telephone

Statement	Number	Percent
Enjoy using the telephone and use it at every opportunity.	63	33.2
Use the telephone whenever I have to.	98	51.5
Dislike using the phone but use it when necessary.	22	11.6
Avoid using the telephone as much as possible.	7	3.7
Total	190	100.0

Table 3

Types of Calls Missed By Respondents

Type of Call	Missed Ability to Make Call		Missed Ability to Receive Call	
	N	%	N	%
Friends	89	36.3	108	44.8
Family	76	31.0	89	36.9
Business	39	15.9	27	11.2
Medical	24	9.7	9	3.7
Shopping	10	4.1	2	0.8
Other	7	2.9	6	2.5
Total	245	99.9	241	99.9

(Totals do not sum to 190 since respondents could reply to more than one type of call.)